WASTED ORNITHOLOGICAL MATERIAL

By W. H. BERGTOLD

WITH ONE PHOTO

IN THE HISTORY of all sciences it appears that the first and early stages of study in each one concern the larger, more striking and general aspects of the subject; then, successively, come periods wherein the smaller, and yet smaller, details are investigated, without finally reaching any limit to the minuteness of the parts or details examined. Ornithology presents no exception to this rule; its study is now in the stage of examining its smaller, but not thereby less important, details. Hence ornithologists of today and of the future who wish to make substantial contributions to their science will have to work with the more humdrum and less showy particulars.

These are days of efficiency along all lines, days when even the aid of a cinematograph is invoked to reveal useless or awkward ways in the manual application of labor; days when no single item of material is wasted if there be any possibility of its being utilized. There is a widespread belief that men of science work on a higher plane than does the mechanic or laborer; it therefore behooves men of science to justify such a reputation by the higher accuracy and exhaustiveness of their work. In the light of such a reputation, what would be said of the workers in, and the students of, a particular science, many of whom waste many of the opportunities and much of the material coming daily to their hands? Moreover, how much more would be said condemning such a practice, if it were known that many of these opportunities and much of this material might never again be duplicated?

It is the object of these few remarks to draw attention to the fact that large possibilities for the accumulation of a rich mass of invaluable data of various sorts are inherent in the birds annually collected for bona fide scientific purposes, and that a considerable part of such possibilities is habitually wasted by a goodly proportion of bird collectors and preparators.

There is, the writer is given to understand, in one large museum of this country, more than a quarter of a million bird skins; these skins, because of their very existence in this museum, have not been wasted, but on the contrary they have been of great use in the study and development of the science of ornithology. *But*, has each and every one of these skins been made to yield all the valuable data inherent in it when it came to hand as a fresh bird, and before it was "made up" into a skin? Very few would be willing to answer "yes" to this question.

Circumstances of equipment, climate, country, etc., often make it impossible for a collector to secure and record all the data pertaining to a fresh bird; no criticism can lie justly against such a worker. However, a large number of bird collectors and preparators are not handicapped by such conditions or circumstances, and yet they fail utterly to make record of many scientific facts related to each fresh bird. Each bird skin in any collection obviously means the possession of a freshly killed bird, at some time by some one, usually a trained preparator or a scientific collector. It is true that many careful and enthusiastic collectors make every effort to utilize in every way fresh speci-

mens coming to their hands; yet one is safe in saying that a much larger proportion of workers do not do so. The freshly collected bird is skinned and properly labeled, and the matter ends there. Surely every newly collected bird has in it more of importance than that—has valuable aspects and possibilities which can be studied and recorded without in the least depreciating its final value as a collection specimen.

Let us enumerate, in part only, what ways a freshly killed bird can be studied before it is finally "made up" into a "skin".

Of these a few are: 1. Its external parts: A. Its measurements. B. The color of the soft parts and the irides. 2. Collecting its dermal parasites. 3. The weight of the specimen. 4. Preserving its "stomach" and contents. 5. Collecting its intestinal parasites. 6. Taking the bird's body temperature if it be secured before or just at death.

It is quite unnecessary now to discuss some of the items mentioned above, for collectors have long since learned that without data relative to them a bird skin is scientifically almost worthless. It is, however, proper now to touch upon some of the others.

Probably all birds have dermal parasites. It is an extremely simple matter to have on one's work table, or desk, or in one's field kit, a few empty phials (one dram), and a stock bottle of a 40 percent solution of formaldehyde or denatured alcohol; then, before skinning a specimen, one can, with a pair of forceps and a little care and patience, and at the expense of very little time, pick off the parasites from the bird's feathers, and save them in a phial of preservative. The addition of a label, on which should be written the date, locality, and host, makes complete a collected side-issue which will be welcomed by an entomologist, and which may develop large value both in entomology and ornithology. If any one ask of what value are such parasites an answer can be found in articles by Kellogg (Auk, vol. 16, 1899, p. 232) and by Ferris (Journ. Mammalogy, vol. 3, 1922, p. 16).

The writer makes the collection of parasites his duty when handling a "flesh" specimen. As an example of the value of any one's efforts along such lines, he may be permitted to say that one species of avian dermal parasite collected by him had never been collected before in the western hemisphere, and also that he was able to help establish the fact that dermal parasites from Bohemian Waxwings taken in Colorado are similar to those taken from Old World Bohemian Waxwings. All dermal parasites coming from a single specimen should be kept together in one container, and due care should be taken to prevent transference of parasites from one specimen to another by avoiding promiscuous packing together of freshly collected different species. Other parasites frequently are found in a bird's digestive tract. These, too, should be collected, properly preserved and labeled, and sent to a helminthologist. Such specimens are always welcome. There is much room for research along these lines. An investigation of such parasites may disclose interesting and even important relations between birds and associated forms of life; for example, as between the intestinal parasites of fish-eating birds, and those of the fish of their habitat waters (Butler, E. P., Studies in the Enteroparasites of Birds and Fishes of Douglas Lake, Cheboygan County, Mich., 1921 [Thesis, Smith College]; Chandler, Journ. Amer. Med. Ass., March 4, 1922, p. 636). The study of the intestinal parasites of man is by no means complete; it possibly might

be made much more so by a systematic and painstaking collection and study of bird enteroparasites.

One explanation of the differing lengths of incubation among birds is that the incubation length is correlated with the bird's size, which means in the last analysis, its weight. One writer (Bergtold, Incubation Periods of Birds, 1917) who studied this question was able to find recorded in the ornithological literature at his command, the weights of only (approximately) ninety-three species, which, together with sixty-seven others secured by his own personal efforts, made a total which is less than one and one-half percent of all the known avian species. Is it not ridiculous, not to say inexcusably wasteful, in the face of this dearth of data, that any one should neglect to weigh a bird

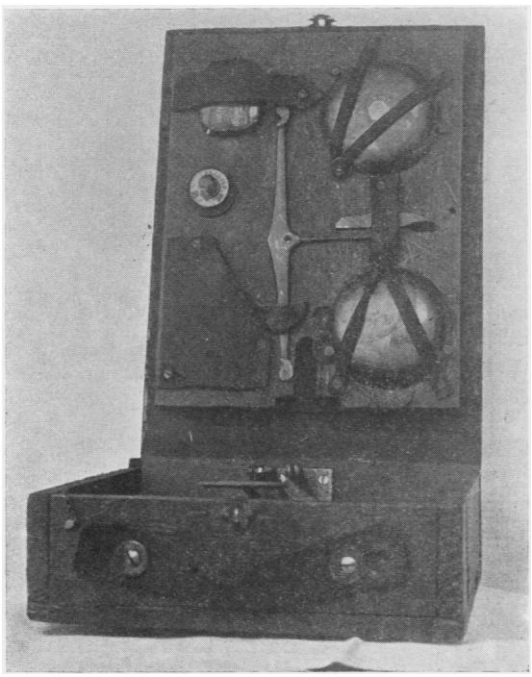

Fig. 31. FIELD SCALES, FOR WEIGHING BIRDS, HERE SHOWN PACKED IN SPECIAL BOX FOR CARRYING.

when it comes to the skinning table? It takes but a little time to weigh an ordinary bird; a well equipped collector or preparator should have at his command a set of small scales, both in his work shop and in his field kit. A compact and light set of scales for the field can be made very easily out of a set of moderate sized druggist's beam balances; the writer has made such a set and carries it with him on all of his collecting trips, and on excursions when no birds are to be collected, but when eggs may be found, and weighed.

This set of scales was made by the writer, and designed to combine minimum weight and size, and maximum efficiency. With it the writer has weighed birds as large as a crow. When closed it is a compact box, ten inches high, seven inches broad, and two and one-half inches thick, its total weight is two

and one-quarter pounds. A druggist's beam balance was used in this portable combination; it will be seen from the accompanying illustration (fig. 31) that the pans, beam, weights and other parts are attached to the inner surface of one side of the box in such a manner as to be easily taken off. The assembled scales are set up on the beam post which is fastened to the center block, to which are also hinged each side of the box. The two box sides fall down onto the supporting surface (table, for instance), leaving the center block and beam post in place.

Such a combination can be used in the workshop as well as in the field, and with it much valuable information can be accumulated which probably is usually wasted. The age, sex, seasonal, and geographic variations in avian weights form a subject as yet almost untouched by the ornithologist; at least it so seems to the writer, who believes that it is not a routine act with most collectors and preparators to determine and record the weight of a freshly killed bird. The paucity of records of bird weights in literature seems to justify this belief.

There is relatively little known concerning the body temperature of birds. That there is a more or less close relation between the temperature of a bird and the length of its incubation period seems indisputable to the writer. The exact delimitation of the relations between these two phenomena awaits solution, at least until a large amount of data concerning avian body temperatures shall have been gathered under known, approved, and carefully recorded conditions, and then studied and analysed hand in hand with the equally carefully determined incubation period length of the corresponding bird.

There are thousands and thousands of birds' eggs preserved in our museums and elsewhere, and, along a few restricted lines, a study of them has been distinctly productive of advances in ornithology. It is highly probable that the known weights of the eggs of different avian species does not include more than one percent of the world's birds. For years ornithologists have said that the differing lengths of incubation among birds is dependent on the differing sizes of their eggs. In the last analysis, size of eggs, in this instance, means weight of eggs. How valuable can an explanation be which is based on less than one percent of the possible data?

From the viewpoint outlined by these remarks, it would probably be exceedingly discouraging if one were to know what the percentage of collected and preserved bird "stomachs" is to the total number of birds annually collected for other purposes. It seems quite unnecessary to call attention anew to the vast economic possibilities opened up by a scientific study of the food of birds, a study which is best promoted by investigating the "stomach" contents of birds. The Biological Survey at Washington welcomes all such material and disseminates for the benefit of all concerned the knowledge gained from it.

The list of different possibilities for study in a freshly killed bird has only been touched upon in the above remarks; many more could be enumerated, all of surpassing interest, and many with a chance of opening up large fields of important discovery, and original worth. The writer has felt for years that such a waste of opportunity and material should not continue; not only because it is utterly unscientific, unproductive, and inefficient, but also because many such opportunities, and much of such material may, in the fu-

ture, never again be at hand. The material is as much lost as is the dodo. Is it not time for many of us collectors and preparators to about face, and be scientific and efficient in action as well as in aspiration and reputation?

Denver, Colorado, March 4, 1922.

NOTES ON THE AMERICAN PINE GROSBEAKS

WITH THE DESCRIPTION OF A NEW SUBSPECIES

By ALLAN BROOKS

SOME ten years ago I received from Mr. C. deB. Green several pine grosbeaks that he had taken near Masset, Queen Charlotte Islands. These were quite unlike any of the North American pine grosbeaks I had seen and I identified them as *Pinicola enucleator flammula* Homeyer. When in Washington in November, 1920, I had the opportunity of examining the series of that subspecies from the type locality in the national collection, and it was obvious that the Queen Charlotte bird was a distinct subspecies, quite the best differentiated of all the American forms.

I have refrained from describing it for a number of reasons, chiefly in the hopes of increasing my series, which had been reduced to three skins. Over a dozen have passed through my hands, however, besides a number of others seen in life which I did not shoot, as Mr. Green wished to take their eggs. As there does not seem any immediate probability of acquiring further material I shall describe the subspecies herewith.

Pinicola enucleator carlottae. new subspecies

Queen Charlotte Pine Grosbeak

Type.—Male, red adult, no number, collection of Allan Brooks; Masset, Graham Island, Queen Charlotte Islands, British Columbia; June 2, 1920; Allan Brooks, collector.

Subspecific characters.—Smallest and darkest of all the American subspecies; tail much shorter than in the other American races. Red of male deeper and more scarlet (less of a carmine); yellow of females and old males darker and suffusing the entire plumage more or less, except the center of belly, lower tail coverts, and under wings and tail.

Description.—Red male (type): Distribution of colors as in red males of this genus, the red nearest the "nopal red"; the interscapular feathers with dark brown centers; scapulars "dark mouse gray"; belly and flanks "mouse gray"; wings and tail "fuscous black", outer edges of all the feathers, except tertials, "mars orange"; white markings of wings much restricted, the two bars on coverts tinged with rose, the edgings to tertials very narrow and grayish; lower tail coverts edged with whitish, their centers "deep mouse gray".

Iris brown, upper mandible black, lower dark brownish gray; feet brownish black. Measurements (average of two males): Length (skins) 193 millimeters, wing 109, tail 79.5, culmen 14.5, depth of bill at base 10.5, width of mandible at base 9.3, tarsus 20.5.

Female: Coloration as in females of the genus, but the yellow areas more extensive and the color much darker. Yellow of head nearest to "orange-citrine" but more red, of rump and upper tail coverts, brighter and more yellow; the breast, flanks, and interscapulars overlaid with a strong wash of "orange-citrine", and the feathers of wings and tail, except tertials, edged with same; tertials edged with ash gray; chin buffy;